

No.5 CROSSBAR SYSTEM CIRCUIT DESCRIPTION SCD-10-01 VOL 3

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Bell Laboratories

SECTION A, PART 0

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Section A, Part 0 provides an index of the SCD by section and part. Each section is indicated by a letter. The digit immediately following the letter indicates the part of the section. A detailed index is provided at the beginning of each part of each section.

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OBJECTIVES, SCOPE, AND GENERAL
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A1 OBJECTIVES, SCOPE AND GENERAL DESCRIPTION OF SFD-10-01

A1-1 OBJECTIVES

A major objective of SFD-10-01 is to portray, in simple form, the system service functions of the basic No. 5 Crossbar office (wire spring marker group) which provides Plain Old Telephone Service (POTS). A further objective is to correlate service functions with the maintenance facilities which have been provided to aid in detecting, analyzing, locating, and clearing trouble conditions. The same objectives apply to SCD-10-01 which provides a written description of SFD-10-01.

A1-2 SCOPE

This issue of the SFD-10-01 will include:

VOLUME I

- A. INDEX
- B. ESTABLISHING DIALING CONNECTION
- C. ESTABLISHING OUTGOING CONNECTION
- D. ESTABLISHING INCOMING CONNECTION

VOLUME II

- E. ESTABLISHING INTRAOFFICE CONNECTION
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A1-3 GENERAL DESCRIPTION OF SFD-10-01

SFD-10-01 is divided into a number of sections, each of which, except for Section A describes a specific job performed by No. 5 crossbar, including AMA, ANI and CAMA functions. Each section is divided into parts which describe the major steps or operations through which the system proceeds to perform the job.

A1-3.1 A SECTION OF SFD-10-01

The SFD-10-01 will eventually have five volumes. Section A0-A2 will appear in each volume and will be identical. The following information will be contained in the A section.

- A0 PAGE INDEX
- A1 GENERAL DESCRIPTION
- A2 TROUBLE ANALYSIS FLOWCHARTS

VOLUME I

- A3 APPARATUS INDEX
- A4 LEAD INDEX

VOLUME II

- A5 APPARATUS INDEX
- A6 LEAD INDEX

VOLUME III

A7 APPARATUS INDEX

A8 LEAD INDEX

VOLUME IV

A9 APPARATUS INDEX

A10 LEAD INDEX

The A section is self-explanatory except for A2, "TROUBLE ANALYSIS FLOW CHARTS".

A1-3.1.1 Trouble Analysis Flowcharts

The trouble analysis flowcharts are an aid in determining from a relatively few punches on the trouble record card where to proceed in the SFD to analyze the trouble. Since there are three different types of trouble cards in general use in the field, three different flowcharts are provided along with facing drawings of the associated trouble record cards. The flowchart is colored to correspond to similarly colored designations on the trouble record card on the facing sheet.

A1-3.1.1.1 Using the Trouble Analysis Flowcharts

The use of trouble analysis flowcharts, presents a logical means for analyzing trouble record cards. It is probable that after the user has followed this approach a few times the flowcharts will be bypassed and numerous shortcuts will be developed. Nevertheless, what is presented is the thought process which the user must go through, even though much of it will eventually be absorbed subconsciously. Once a sound basic understanding of trouble card analysis is established, speed and accuracy in analysis will follow.

Assume that an E4393 double-sided 1/X trouble record card is to be analyzed. (Refer to description of symbols (SFD-A103).)

Start at A0 on SFD-A204 with instruction block marked "Observe Front of Card," follow line to right to the decision box with the designation TI in it. Each decision box has two outputs marked Y (YES) and N (NO). The location of the TI designation on the card (S8-00) is included in the decision box which asks the question "Is the TI designation punched?" If the answer is YES, follow the output marked Y.

If the answer is NO, follow the output marked N. Thus, if the TI designation is punched, the next decision to be made is whether to read the front or back of the card. Since the back of this card* deals only with AMA circuits, assume the TURN OVER designation is not punched.

* When using the 2/X card E5488, the "TURN OVER" designations will be punched for pretranslation trouble records which appear on the back of the card. Pretranslators are covered in this issue.

Since it was assumed that the TI designation was punched and since this indicates a service call rather than a test call, none of the test call indications in the blue decision box should be perforated. If LVM† is punched, and MLV is not, it indicates that this is a calling line identification card. Such cards are produced on all calls to lines which have been bothered by nuisance calls and have requested special treatment to help determine the origin of the nuisance calls.

If the LVM designation is not punched but the PRT designation is punched, this is a pretranslator trouble record. The box below the PRT decision box directs the reader to B602 which is a sequence chart for the pretranslator used for determining the point of failure. Its use is described in SCD-B6-17.

If the PRT designation is not punched but MKR is punched, this is either a dial tone or a completing marker failure. For this type of card,‡ reference to the next decision box must be made. It must be known for the particular office which marker numbers are for DTMs and which are for CMs. Assume that the DR-, DRT- designations punched are for a DTM. The reader is directed to SFD-B002/C0 which is another flowchart for analysis of dial tone marker trouble record cards. Its use is described in SCD-B0.

If the DR-, DRT- designations are for a CM, the reader should proceed down the column of red decision boxes which indicate the class of completing marker call. The class of call designation punched directs the reader to one or more subclasses of call. The subclass of call directs the reader to a flowchart similar to SFD-B002 for each subclass.

† LVM on a test call with MLV punched means "Line Verification Match".

‡ Only the double-sided 2/X card indicates directly (using a DTM and a CM designation) whether a dial tone or a completing marker produced the card.

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SECTION A, PART 1
OBJECTIVES, SCOPE, AND GENERAL
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A1 OBJECTIVES, SCOPE AND GENERAL DESCRIPTION OF SFD-10-01

A1-1 OBJECTIVES

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- M. ESTABLISHING TRUNK CLASS OF TEST

N. ESTABLISHING MARKER LINE VERIFICATION AND LINE TEST

P. ESTABLISHING MONITORING FOR REGISTERS AND SENDERS

Additional sections planned include:

VOLUME IV LAMA, CAMA AND ANI

VOLUME V CENTREX PHASE I, II, AND III

A1-3 GENERAL DESCRIPTION OF SFD-10-01

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A5 APPARATUS INDEX

A6 LEAD INDEX

VOLUME III

A7 APPARATUS INDEX

A8 LEAD INDEX

VOLUME IV AND V (RESERVED)

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A1-3.1.1 Trouble Analysis Flowcharts

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‡ Only the double-sided 2/X card indicates directly (using a DTM and a CM designation) whether a dial tone or a completing marker produced the card.

